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EXAMINER	
YIGDALL, MICHAEL J	
ART UNIT	**PAPER NUMBER**
2192	

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/701,848	RAO ET AL.	
	Examiner	Art Unit	
	Michael J. Yigdall	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 6, 2005 has been entered.

Response to Arguments

2. Applicant's arguments with respect to independent claim 1 have been considered but are moot in view of the new ground(s) of rejection.

The Marsh reference teaches "loader software that supports a plurality of loaders," as set forth in the claim rejections below.

3. Applicant's arguments with respect to independent claim 16 have been fully considered but they are not persuasive.

Applicant contends that the Lajoie reference fails to teach, suggest or disclose, "storing a location in the file system of the saved information for updating firmware to a memory reference," and that the firmware header in Lajoie does not hold data associated with the downloaded and saved information for updating firmware (Applicant's remarks, page 8). These arguments were found not persuasive in the advisory Office action mailed on August 9, 2005. In response to the examiner's reasoning, Applicant now contends that the application program in Lajoie does not partake in the upgrade process and as a result cannot be characterized as "information for updating firmware" (Applicant's remarks, page 8).

However, the examiner does not agree with Applicant's conclusions. Lajoie discloses that the application program is part of the firmware and that the application program of the firmware is upgraded (see, for example, paragraph 0011, lines 4-8). To upgrade the application program of the firmware, a new application program 310 is copied from the server 110 to the application program memory area 220 (see, for example, paragraph 0034, lines 1-4). In other words, to upgrade the application program of the firmware, a new application program 310 is downloaded from the server 110 and is saved to the application program memory area 220. The new application program 310 is thus "information" for upgrading the application program of the firmware. Indeed, the new application program 310 is essential to the upgrade process. Therefore, the new application program 310 is reasonably interpreted as "information for updating firmware" as recited in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 16-22 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Pub. No. 2004/0015952 to Lajoie et al. (art of record, "Lajoie").

With respect to claim 16 (original), Lajoie discloses a method for updating firmware in an electronic device with a file system (see, for example, the abstract, and the file system illustrated within non-volatile memory 210 in FIG. 2), the method comprising:

(a) downloading information for updating firmware in the electronic device from a server (see, for example, paragraph 0034, lines 1-4, which shows downloading information from a server for updating the firmware);

(b) saving the downloaded information for updating firmware in the file system (see, for example, paragraph 0034, lines 1-4, which shows saving the information in an area of the file system);

(c) storing a location in the file system of the saved information for updating firmware to a memory reference (see, for example, paragraph 0034, lines 4-8, which shows storing a header comprising a location of the saved information); and

(d) determining whether the firmware needs to be updated when the electronic device reboots (see, for example, the flowchart illustrated in FIG. 5, which shows determining whether the firmware needs to be updated when the device is reset or reboots).

With respect to claim 17 (original), Lajoie further discloses the limitation wherein, if it is determined that the firmware does not need updating, the method further comprises a normal start up of the electronic device (see, for example, the flowchart illustrated in FIG. 5, which shows switching to the application, i.e. starting the device normally, if the firmware does not need to be updated).

With respect to claim 18 (original), Lajoie further discloses the limitation wherein, if it is determined that the firmware does need updating, the method further comprises:

(a) retrieving the reference to the information for updating firmware from the memory (see, for example, paragraph 0034, lines 4-8, which shows retrieving from memory the length or reference to the information for updating the firmware); and

(b) updating the firmware using the information for updating firmware (see, for example, paragraph 0034, lines 1-4, which shows updating the firmware with the information).

With respect to claim 19 (original), Lajoie further discloses the limitation wherein the method further comprises communicating a confirmation of the updating of the firmware to the server (see, for example, paragraph 0043, lines 1-7 and Table 4, which show communicating a confirmation to the server of updating the firmware).

With respect to claim 20 (original), Lajoie further discloses the limitation wherein the method further comprises testing the updated firmware for errors (see, for example, paragraph 0031, lines 8-14, which shows testing the updated firmware for errors).

With respect to claim 21 (original), Lajoie further discloses the limitation wherein the method further comprises communicating any errors found to the server (see, for example, paragraph 0031, lines 17-20, which shows communicating a message to the server if errors are found).

With respect to claim 22 (original), Lajoie further discloses the limitation wherein the electronic device retrieves status information from the information for updating firmware via the

memory reference to determine whether the firmware needs to be updated using the information for updating firmware (see, for example, the flowchart illustrated in FIG. 5, which shows determining from the client state, i.e. status information, whether the firmware needs to be updated).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lajoie in view of U.S. Pub. No. 2002/0073304 to Marsh et al. (art of record, "Marsh").

With respect to claim 1 (original), Lajoie discloses a system that facilitates updating of firmware in an electronic device with a file system (see, for example, the abstract, and the file system illustrated within non-volatile memory 210 in FIG. 2), the system comprising:

an electronic device (see, for example, the electronic device illustrated in FIG. 2) comprising:

(a) at least one of volatile and non-volatile memory (see, for example, non-volatile memory 210 and RAM or volatile memory 280 in FIG. 2).

Although Lajoie discloses a firmware integrity checker (see, for example, FIC 350 in FIG. 3) that functions as "loader software" (see, for example, paragraph 0038, lines 1-10) and

supports transferring control to or "loading" a plurality of programs (see, for example, paragraph 0039, lines 5-9), Lajoie does not expressly disclose:

(b) loader software that supports a plurality of loaders.

However, Marsh discloses loader software (see, for example, system loader 410 in FIG. 2) that supports a plurality of loaders (see, for example, paragraph 0033, lines 9-19, which shows that the system loader 410 is configured as one of a plurality loaders to load one of a plurality of executables). The loader software places the executables from storage into RAM for execution to optimize performance (see, for example, paragraph 0033, lines 19-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to supplement the firmware integrity checker of Lajoie with loader software that supports a plurality of loaders, such as taught by Marsh, so as to place the programs from storage into RAM for execution when transferring control to the programs, thus optimizing the performance of the electronic device.

Lajoie further discloses:

(c) update software that supports retrieving information for updating firmware in the electronic device (see, for example, upgrade program 320 in FIG. 3, and paragraph 0031, lines 1-4, which shows that the upgrade program retrieves information for updating the firmware); and

(d) communication software that administers communicating the information for updating firmware from a server (see, for example, communication protocol stack 330 in FIG. 3, and paragraph 0033, lines 16-18, which shows communicating with a server).

With respect to claim 2 (previously presented), Lajoie further discloses the limitation wherein the system further comprises a driver software that communicates, to the update

software, information about the retrieved information for updating firmware in the electronic device (see, for example, paragraph 0033, lines 11-16 and paragraph 0042, lines 1-4, which show that the application program functions as driver software to transfer requests to the upgrade program, i.e. to communicate information to the upgrade program regarding the information for updating the firmware).

With respect to claim 3 (original), Lajoie further discloses the limitation wherein the server is an external system (see, for example, upgrade server 110 in FIG. 1).

With respect to claim 4 (original), Lajoie further disclose the limitation wherein the server is a local file system (see, for example, paragraph 0031, lines 20-23, which shows upgrading the firmware locally).

With respect to claim 5 (original), Lajoie further discloses the limitation wherein the update software comprises:

(a) loading software that retrieves updating information from the server (see, for example, paragraph 0031, lines 1-4, which shows retrieving information from the server for updating the firmware);

(b) updating software that applies the retrieved information for updating firmware in the electronic device (see, for example, paragraph 0034, lines 1-4, which shows applying the information and thereby updating the firmware);

(c) security software that supports secure communication between the server and the electronic device (see, for example, paragraph 0041, lines 5-9, which shows encryption means for supporting secure communication);

(d) setting software that sets values of data to indicate information about the information for updating firmware (see, for example, paragraph 0034, lines 4-8, which shows setting values in a header to indicate information about the information for updating the firmware); and

(e) memory management software that manages accessing and manipulating information in the memory (see, for example, paragraph 0026, lines 12-14, which shows a library of memory management functions for accessing and manipulating information in the memory).

With respect to claim 6 (original), Lajoie further discloses the limitation wherein the update software further comprises a reference comprising at least one parameter related to the information for updating firmware (see, for example, paragraph 0029, lines 1-4 and Table 1, which show parameters in the header related to the information for updating the firmware).

With respect to claim 7 (original), Lajoie further discloses the limitation wherein the at least one parameter comprises a state flag (see, for example, paragraph 0029, lines 1-4 and Table 1, which show a 1-byte client state variable or flag).

Although the state flag taught by Lajoie has a size of 1 byte, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the flag with a size of 4 bytes, as recited in the claim. It is well known in the art that 1 byte of information, such as the state flag of Lajoie, can be equivalently represented within a 4-byte space.

With respect to claim 8 (original), Lajoie further discloses the limitation wherein the at least one parameter comprises an address referencing the information for updating firmware (see, for example, paragraph 0029, Table 1, which shows an application end page parameter that

references the information for updating the firmware, and paragraph 0028, lines 1-13, which shows that the page numbers correspond to addresses in the memory).

With respect to claim 9 (original), Lajoie further discloses the limitation wherein the at least one parameter comprises an address referencing a backup section (see, for example, paragraph 0029, Table 1, which shows a last page parameter; paragraph 0044, lines 10-14, which shows that the last page parameter is a backup means for recovering from a communication failure; and paragraph 0028, lines 1-13, which shows that the page numbers correspond to addresses in the memory).

With respect to claim 10 (original), Lajoie further discloses the limitation wherein the at least one parameter comprises a CRC value (see, for example, paragraph 0039, lines 2-5, which shows a CRC-16 value).

Although the CRC value taught by Lajoie has a size of 16 bits or 2 bytes, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a 4-byte CRC value, as recited in the claim. It is well known in the art that a 4-byte CRC value can be used to provide greater error detection reliability than a 2-byte CRC value.

With respect to claim 11 (original), Lajoie further discloses the limitation wherein the security software controls information in the electronic device, wherein the information indicates whether the firmware in the electronic device needs updating (see, for example, paragraph 0038, lines 1-10 and paragraph 0039, lines 5-9, which shows the firmware integrity checker serving as security software for indicating whether the firmware needs to be updated).

With respect to claim 12 (original), Lajoie further discloses the limitation wherein the security software utilizes the setting software to set the value of the at least one parameter (see, for example, paragraph 0038, lines 11-15, which shows storing or setting the client state parameter in the header).

With respect to claim 13 (original), Lajoie further discloses the limitation wherein the updating software uses the reference to determine whether the firmware in the electronic device needs updating (see, for example, the flowchart illustrated in FIG. 5, which shows using the client state reference to determine whether the firmware needs to be updated).

With respect to claim 14 (original), Lajoie further discloses the limitation wherein the updating software uses the reference to determine the location of the information for updating firmware (see, for example, paragraph 0034, lines 4-8, which shows using the header to determine the length or location of the information for updating the firmware).

With respect to claim 15 (original), although Lajoie discloses downloading information from the server for updating the firmware (see, for example, paragraph 0034, lines 1-4), Lajoie does not expressly disclose the limitation wherein the update software utilizes a uniform resource locator (URL) to download information for updating firmware from the server.

However, Lajoie further discloses that the server downloads the information for updating the firmware from a firmware provider over an Internet connection (see, for example, paragraph 0022, lines 5-7 and paragraph 0023, lines 1-5). It is well known in the art that an addressing or locating means, such as a uniform resource locator, is necessary in order to download such information over an Internet connection.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the update software taught by Lajoie to download the information for updating the firmware by way of an Internet connection, as also taught by Lajoie, and accordingly, to use a URL in order to locate the resources to download.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Yigdall whose telephone number is (571) 272-3707. The examiner can normally be reached on Monday through Friday from 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MY

Michael J. Yigdall
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